

# DATA SHEET

## PRESSURE REGULATORS



### Stainless Steel Models: **7361, 7363**



#### FEATURES

- Maintains full pressure when there is no downstream demand, allowing for a quick return to system pressure.
- Provides pump protection against pressure fluctuations and system changes.
- Minimizes pressure fluctuations when using multiple guns and nozzles alternately.
- Features a top adjustment handle and a locking nut to secure the exact pressure setting.
- Contains no external moving parts.
- Stainless steel internal components and FPM elastomers ensure compatibility with various liquids and temperatures.

#### SPECIFICATIONS

##### 7361

	U.S.	Metric
Flow Range	10–60 gpm	38–227 lpm
Pressure Range	400–1000 psi	27.5–69 bar

##### 7363

	U.S.	Metric
Flow Range	10–60 gpm	38–227 lpm
Pressure Range	600–1800 psi	41.4–124 bar

#### COMMON SPECIFICATIONS

	U.S.	Metric
Maximum Temperature	240° F	115° C
Inlet Port	1" NPT(F)	1" NPT(F)
Bypass Port	1¼" NPT(F)	1¼" NPT(F)
Weight	6.2 lbs	2.8 kg
Dimensions	9.1 x 3.43 x 2.38"	231 x 87 x 60.4 mm

**Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system**

## SELECTION

These pressure regulators are designed for systems with single or multiple pumps, solenoid (gate) valves, nozzles, standard or "weep" guns.

**Note:** For multiple pump systems, it is best to use a pressure regulator, not a pressure-sensitive regulating unloader.

These regulators should meet both the desired system flow (combined nozzle flow rate requirement) and the desired system pressure.

**Note:** Operation below the minimum rated flow of the regulator will cause cycling. Operation above the maximum rated flows of the regulator may cause cycling and premature regulator wear and preventing achievement of the desired system pressure.

## INSTALLATION

These regulators can operate properly mounted in any direction. However, it is preferred to keep the plumbing to a minimum and the adjusting cap easily accessible. The best mounting location is directly on the pump discharge manifold head or in the discharge line using a tee fitting.

The inlet connection is located on the side and is a 1/2" NPT(F) port. Plumb into this port for the discharge flow from the pump.

The bypass connection is a 3/4" NPT(F) port located on the bottom. Bypass fluid is directed out of this port and can be routed to a reservoir or a drain.

## OPERATION

These pressure regulators maintain system pressure in the discharge line and at the pump head when the trigger gun or solenoid (gate) valve is closed, or the nozzles are clogged, thus bypassing all unrequired flow. Squeezing the trigger gun or opening the solenoid (gate) valve allows for a quick return to system pressure.

## PRESSURE ADJUSTMENT

**Note:** Pressure is not set at the factory.

1. Setting and adjusting the regulator pressure must be done while the system is running.
2. Start the system with the regulator backed off to the lowest pressure setting (counterclockwise).
3. Increase the regulator pressure setting by turning the pressure adjusting handle clockwise.
4. Squeeze the trigger and read the pressure on the gauge at the pump.

**Note:** Do not read the pressure at the gun or nozzle.

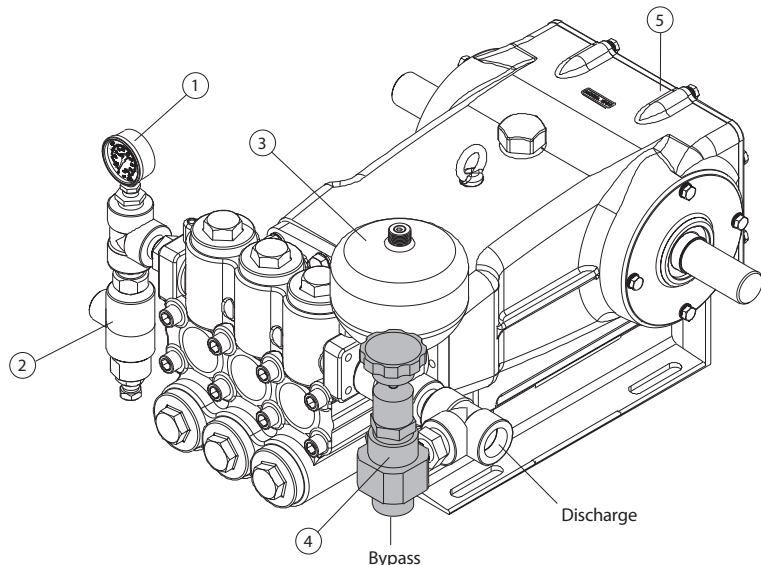
5. If more pressure is desired, release the trigger, turn adjusting handle one-quarter turn in a clockwise direction.
6. Squeeze the trigger and read the pressure.
7. Repeat this process until desired system pressure is attained.
8. Stop turning the adjusting handle and thread lock nut down towards the upper body of the regulator to lock it in place.

**Note:** A minimum of 5% of the flow through the regulator should bypass for proper regulator performance. If the entire regulator flow pumps through the nozzle (zero-bypass), the valve can easily be set for pressure higher than the desired pressure, causing a malfunction or premature wear.

**NOTICE** A secondary pressure relief device (i.e., pop-off valve) should be used along with this pressure regulator. The final adjustment for the relief valve should relieve at 200 psi above the system operating pressure.

## TYPICAL REGULATOR INSTALLATION

1. Pressure Gauge
2. Relief Valve  
(Secondary Pressure Relief Device)
3. Pulsation Dampener
4. **Pressure Regulator**  
(Primary Pressure Regulating Device)
5. Triplex Plunger Pump



## SERVICING

### Disassembly

1. Disconnect bypass and inlet plumbing from the regulator.
2. Remove regulator from the pump.
3. Secure lower body of regulator in a vise with adjusting handle facing up.
4. Remove adjusting handle and screw from the upper body.
5. Remove upper body by unthreading from the lower body.
6. Remove first spring retainer, spring and second spring retainer from lower body.
7. Remove the lower body from the vise.
8. Place the lower body upside down on a flat surface with the bypass port facing up. Grasp lower body and gently tap against a flat surface. The piston guide and the ball will fall out.
9. Grasp lower body and gently tap against a flat surface to remove the piston insert, piston and spring.
10. Separate piston and spring from piston insert.
11. Place lower body with bypass port facing up on the flat surface. Using a tool with the same diameter as that of the seat, drive out the seat.

**NOTICE** Exercise extreme caution to avoid contact and damage to the inside diameter of the piston insert, lower body sealing areas, and seat. Also, take care to avoid contact and damage to the outside diameter of the piston insert, piston and seat.

**Note:** With the regulator completely disassembled, inspect sealing area where the seat and piston insert make contact within the regulator's lower body for grooves, pitting and wear. If damage is found, stop the repair and replace it with new a lower body or completely new regulator. If not, proceed with reassembly.

### Reassembly

1. Place lower body with bypass port facing down on a flat surface.
2. Lubricate outside diameter of seat. Press seat into the lower body with the small-diameter surface facing down. Ensure seat lip rests squarely on the lower body surface.
3. Place lower body in a vise with large diameter hole facing up.
4. Lubricate and install O-ring onto the outer diameter of the piston insert. Place O-ring into inside diameter of the piston insert. Press piston insert with small diameter down into lower body.
5. Install flat washer into piston insert so it rests on top of O-ring.
6. Place seat spring on top of flat washer.
7. Lubricate and install O-ring, then backup ring onto outside the diameter of piston.
8. Place piston over spring.
9. Place piston guide on top of the piston. Insert the ball into center hole of the piston guide.
10. Place first spring retainer with stepped side facing up onto the piston guide.
11. Install spring onto the first spring retainer and then place second spring retainer on spring with stepped side facing down.
12. To install the upper body onto the lower body, use the hole in the upper body to fit a screwdriver through to support the stacked internal parts. Thread upper body onto the lower body while holding parts in place with the screwdriver. Remove screwdriver.
13. Thread in adjusting handle with the screw through the hole in the upper body.
14. Reinstall the regulator onto the pump.
15. Reconnect the bypass and inlet plumbing to regulator.
16. Proceed to PRESSURE ADJUSTMENT.

## TROUBLESHOOTING

Problems	Probable Cause	Solution
Excessive pressure fluctuations	<ul style="list-style-type: none"><li>• Too little flow for valve specifications</li><li>• Air in system, poor connections</li><li>• Inlet seals in pump worn</li><li>• O-ring in gun worn</li></ul>	<ul style="list-style-type: none"><li>• Replace with proper valve</li><li>• Check connection, tighten</li><li>• Replace with seal kit</li><li>• Replace O-ring in gun</li></ul>
System will not build up to pressure	<ul style="list-style-type: none"><li>• Nozzle worn</li><li>• Improper nozzle size for system specifications</li><li>• Foreign material trapped in seat</li></ul>	<ul style="list-style-type: none"><li>• Replace nozzle</li><li>• Change nozzle to proper size</li><li>• Clean out debris</li></ul>
Pressure drop	<ul style="list-style-type: none"><li>• Nozzles worn</li><li>• Piston and seat in regulator worn</li><li>• Air in system, poor connections</li><li>• Insufficient flow to pump</li><li>• Filter clogged</li></ul>	<ul style="list-style-type: none"><li>• Replace nozzle</li><li>• Replace piston and seat</li><li>• Check connection, tighten</li><li>• Increase flow to pump</li><li>• Check and clean regularly</li></ul>
Pressure spikes while in bypass	<ul style="list-style-type: none"><li>• Minimum bypass of 10% not present</li><li>• Excessive pressure adjustment made for worn nozzle</li></ul>	<ul style="list-style-type: none"><li>• Back-off adjusting handle and reset</li><li>• Replace nozzle, reset system pressure</li></ul>
Leakage from regulator vent hole	<ul style="list-style-type: none"><li>• O-ring around piston worn or piston retainer scored</li></ul>	<ul style="list-style-type: none"><li>• Service with O-ring kit</li></ul>

## PARTS LIST

ITEM	P/N	MATL	P/N	MATL	DESCRIPTION	QTY
	<b>7361</b>		<b>7363</b>			
401	30948	NY R	30948	NY R	Handle, Adjusting without screw	1
403	<b>30933</b>	S	<b>30912</b>	STZP R	Nut, Lock	1
405	30932	S	30932	S	Adjuster, Pressure	1
406	—	STNP	—	STNP	Body, Upper	1
408	<b>32353</b>	STL R	<b>30946</b>	STL R	Spring	1
410	34289	BB R	34289	BB R	Retainer, Spring	2
426	30927	BB R	30927	BB R	Guide, Piston	1
427	30926	SSA R	30926	SSA R	Insert, Piston	1
432	30936	SS R	30936	SS R	Ball, Seat	1
435	30924	SS R	30924	SS R	Piston	1
436	30918	SSA R	30918	SSA R	Seat	1
438	30934	SS	30934	SS	Spring, Seat	1
440	—	SS	—	SS	Body, Lower Hex	1
445	30925	SS	30925	SS	Washer, Flat	1
468	30950	FPM R	30950	FPM R	Kit, O-Ring	1
490	30947	BB	30947	BB	Bracket, Panel Mount (Not Shown)	1

**Bold print part numbers are unique to a particular model.**

*Italics are optional items.*

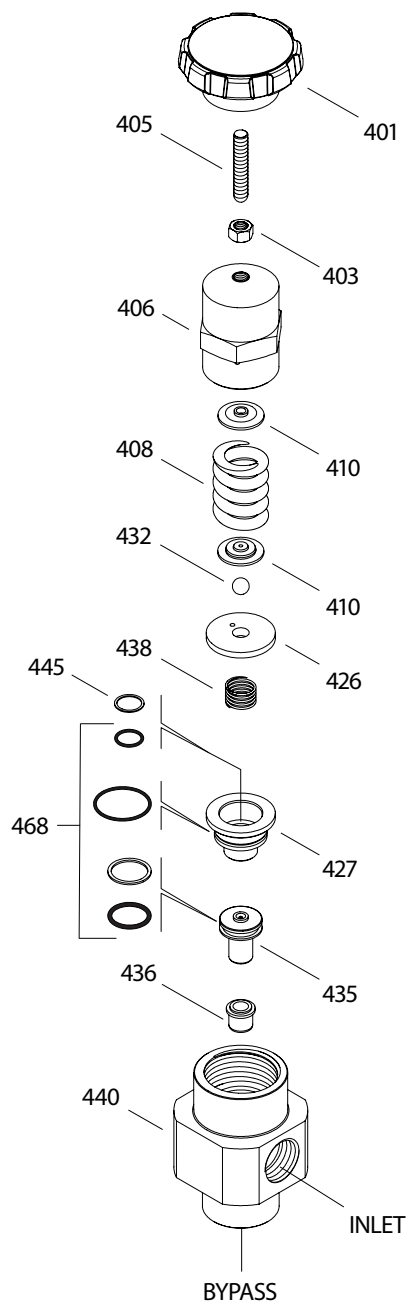
R Components comply with RoHS Directive.

Material Codes (Not Part of Part Number): BB=Brass FPM=Fluorocarbon

NY=Nylon S=304SS SS=316SS SSA=316SS Condition

A STL=Steel STNP=Steel/Nickel Plated

## EXPLODED VIEW



### ⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. Cat Pumps does not assume any liability or responsibility for the operation of a customer's high-pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system. The CAUTIONS and WARNINGS are included in each Service Manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at [www.catpumps.com/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)